International Harmonized Research Activities

March, 2001

IHRA Steering Committee Presentation to

WP-29

Purpose of Briefing

- **Address the Following Questions:**
  - What Is IHRA?
  - How Is IHRA Organized?
  - What Countries Are Involved in IHRA?
  - What Issues Are Being Addressed by IHRA?
  - How Do I Find Out More About IHRA?
  - What Is the Future of IHRA?

IHRA

- **International Harmonized Research Activities**

An Inter-Governmental Initiative Which Aims to Facilitate Greater Harmony of Vehicle Safety Policies Through Multi-National Collaboration in Research.

International Harmonized Research Activities

- Genesis - Dr. Martinez WP.29 Speech in November 1995
- Reality-15th Enhanced Safety Of Vehicles Conference - in 1996
- Developed by ESV Government Focal Points
- Address Some of the Major Issues of Highway Safety By Harmonizing Research Activities
- Initial Period: 5 Years

What is the ESV Conference?

- Conference Sponsored by Governments
- Initially a Forum to Share Research Findings From Experimental Safety Vehicle Programs
- Currently a Technical Conference on Vehicle Traffic Safety
- Opportunity for International Sharing of Information and Issues
- Recognizing Contributions to the Field of Highway Traffic Safety

IHRA Organization

- **Steering Committee**
  - Government Representatives
  - Chaired by NHTSA
- **Working Groups**
  - Government and Industry Representatives Participate

IHRA Industry Participation

- **Each Working Group Has 3 Regional Industry Representatives**
- **Regional Locations Represented**
  - Asia/Pacific
  - Europe
  - North America
- **Selected by OICA**
- **At Chairman's Discretion Other Experts Invited As Necessary**

IHRA Steering Committee Members

Australia - Keith Seyer

Canada - Brian Jonah

EC - Per-Ove Engelbrecht

France - Bernard Gauvin

Germany - K-L Lenz

EEVC - Bernd Friedel

Hungary - Sandor Szabo

Italy - Claudio Lomonaco

Japan - Masahiko Naito

Netherlands - Gerard Meekel

Poland - Wojciech Przybylski

Sweden - Anders Lie

U.K. - John Jeyes

U.S. - Ray Owings

IHRA Organization of Working Groups

IHRA WG	Lead Country
Biomechanics	U.S.
Frontal Impact	EEVC/Italy
Compatibility	EEVC/U.K.
ITS	Canada
Pedestrian	Japan
Side Impact	Australia

Pedestrian Safety WG Goals

- Based on Real World Crashes
- Component Test Procedure Approach
- Pedestrian Protection Test Procedure
- Windshield Contact

Pedestrian Safety WG Progress

- **Consolidated Data Set**
  - Identification of Impact Points and Velocity
- **Simulation - Head Orientation**
  - Assumptions & Outstanding Issues Under Discussion
- **Head Test Procedure - Adult/child**
  - HIC Based
- **Leg Test Procedures**
  - Development of harmonized leg protection test procedure by 2001 unlikely

Biomechanics WG Objectives

- **Side Impact Initiative**
  - World-Wide Side Impact Crash Problem
  - World-Wide Anthropometric Characterization of Crash Victims for Dummy Definition (WorldSID coordination)
  - Develop Biofidelic Impact Response Specifications for Dummy
  - Develop Crash Test Dummy Evaluation Methodologies
  - Identify Meaningful Injury Criteria and Performance Limits
- **Frontal Impact Initiative**
  - Repeat Side Impact Tasks for Frontal Impact Situation

Biomechanics WG Progress

- **Side Impact Initiative:**
  - Significant Progress in Quantifying World-Wide Side-Impact Problem, Anthropometric Definitions of Crash Victims, Impact Requirements for Anthropomorphic Test Devices, and Identifying Meaningful Injury Criteria and Performance Limits.

Advanced Frontal Impact WG - Objectives

- **Develop Internationally Agreed Upon Test Procedures Designed to Improve Occupant Protection in Frontal Crashes**

Advanced Frontal Impact WG- Progress

- **Two-stage Approach Has Been Adopted.**
- **First Stage - Consider Existing Test Procedures for Frontal Crash Protection**
  - Offset Deformable Barrier Test to Assess Occupant Protection in a Crash Environment Associated With Occupant Compartment Intrusion
  - Full Width Wall Test to Assess Occupant Protection in a Crash Environment Associated With High Deceleration
- **Second Stage - Continue Development of a Test Procedure That Accounts for Mass and Impact Angle Effects Along With Compartment Intrusion and Crash Pulse Severity**
  - Discussion Points Include Vehicle Categories, Type of Barrier, Impact Speed, Performance Criteria, Air Bag Performance, Impact Angle, and the use of a Trolley

Vehicle Compatibility WG - Objective

- **Improve Occupant Protection by Developing Internationally Agreed Upon Test Procedures Designed to Improve the Compatibility of Light Vehicle Structures in Front-to-front and Front-to-side Impacts**

Vehicle Compatibility WG - Progress

- **Enhanced Prospects for Improved Frontal Evaluation Procedures.**
- **Agreed Upon Relevant Aspects Include:**
  - Good Structural Interaction
  - Maintaining Occupant Compartment Integrity
  - Predictable Structural Performance
  - Controlling Deceleration Time Histories

Vehicle Compatibility WG - Progress (continued)

- **Candidate Test Procedures Include**
  - Full Frontal Barrier Test With Load Cells (Rigid Wall With or Without a Thin Deformable Element)
  - Offset Deformable Barrier (ODB) Test With Load Cells
  - Overload Test (Passenger Compartment Integrity) Using ODB
  - Barrier Elements to Explore Shear (E.G., The Progressive Deformable Barrier)
  - Moving Deformable Barrier Test With Load Cells

Side Impact WG - Objective

- Review Real World Crash Data
- Coordinate Research Worldwide
- Support Development of Future Test Devices and Test Procedures Including Full System and Component Tests
- Interact With Other WGs
- Enhance Side Crash Safety
- Form Consensus on Scientific Research Findings

Side Impact WG - Progress

- **Reviewed Worldwide Safety Problem**
- **Worked closely with WorldSID/Bio WG**
- **Agreed on Need for :**
  - Pole Test
  - MDB
  - Out-of-position Testing (Side Airbags)
  - Interior Head Impact Tests
- **Specific Test Conditions Under Discussion**

Intelligent Transportation System WG - Objective

- **Promote Opportunities for International Research Coordination**
  - Driver Workload
  - Direct Safety Benefits (Crash Avoidance)
  - Behavioral Adaptation
  - System Usability

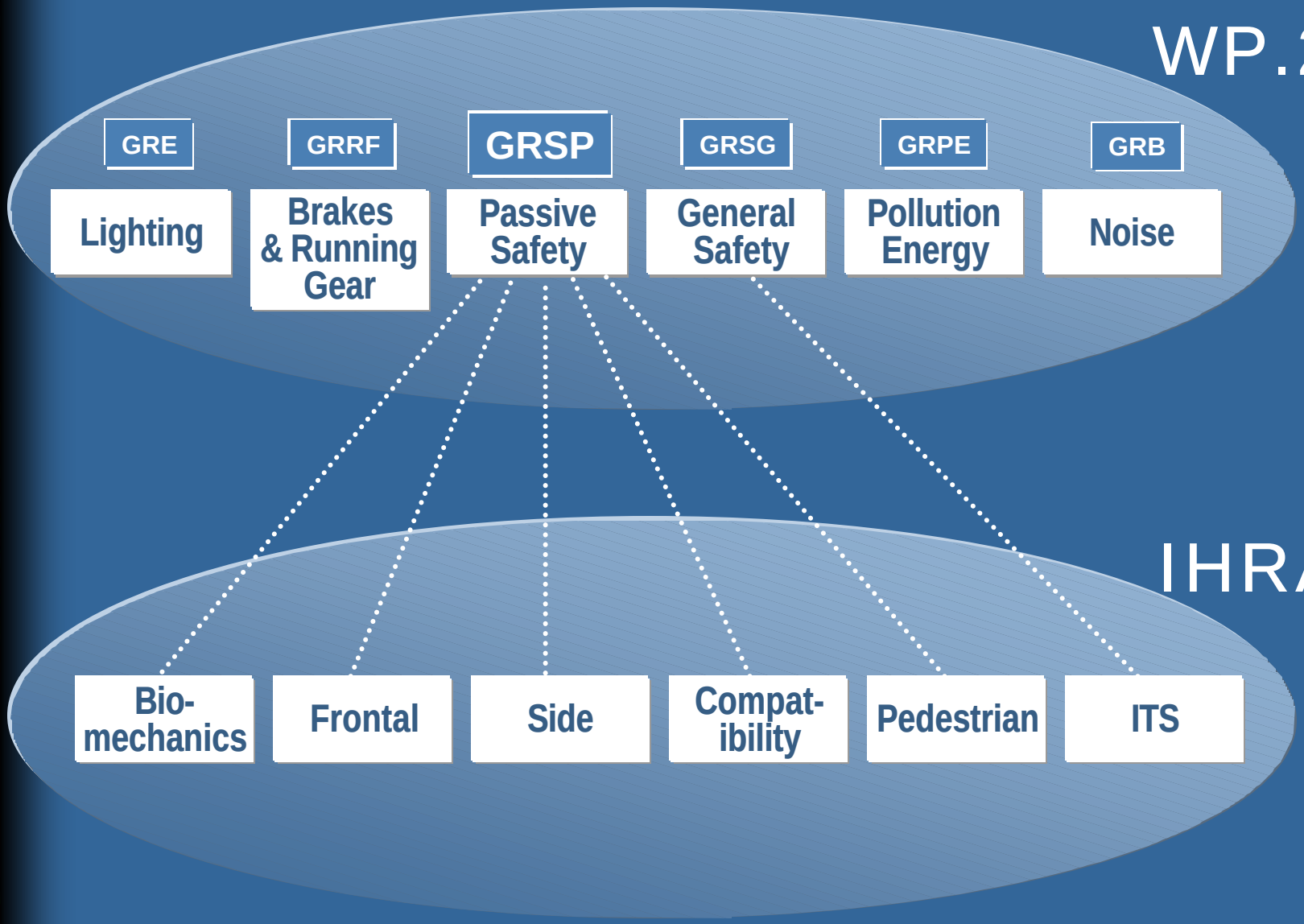
ITS Focus Areas

- Harmonized Safety Evaluation Methodology
- Effects of False Expectation on Driver Performance
- Human Factors Principles for In-vehicle Systems
- Naturalistic Driving Behavior
- Simulator Reference Test Scenarios
- Secondary Task Methodology for Evaluating Safety Effects of Driver Workload
- Validation of Surrogate Safety Measures
- Driver Learning, Retention, and Acceptance of New ITS Systems

IHRA Reporting

- **17th ESV Conference - Amsterdam**
  - June 4-7, 2001
  - 5 Year Report from 6 Working Groups
  - Decision on Future of IHRA
- **After the 17th ESV Conference**
  - Lead Country for Each Working Group Will Coordinate With Appropriate GR to Present the Results of IHRA

Proposed Presentation



Final Comments

- **IHRA Steering Committee Would Like to Thank WP.29 for This Opportunity**
- **Future Activities of IHRA Beyond June Are Still Under Discussion**
- **We Would Appreciate Your Written Comments - Send To:**
  - IHRA Secretariat
  - John.Hinch@nhtsa.dot.gov